

EXHIBIT A

020207Bridgestone(1).txt

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IN THE UNITED STATES DISTRICT COURT
FOR THE DISTRICT OF DELAWARE

BRIDGESTONE SPORTS CO., LTD.,)
Plaintiff,) C.A. No. 05-132-JJF
v.)
ACUSHNET COMPANY,)
Defendant.)

February 2, 2007
10:39 a.m.
Courtroom 4B

844 King Street
Wilmington, Delaware

BEFORE: THE HONORABLE JOSEPH J. FARNAN, JR.
United States District Court Judge

APPEARANCES:

MORRIS, NICHOLS, ARSHT & TUNNELL
BY: JACK B. BLUMENFELD, ESQ.

-and-

PAUL HASTINGS
BY: ROBERT M. MASTERS, ESQ.
BY: BRANDON WHITE, ESQ.

Counsel for Plaintiff

□

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1 APPEARANCES CONTINUED:

2
3 POTTER, ANDERSON & CORROON, LLP
4 BY: RICHARD HORWITZ, ESQ.

-and-

Page 1

020207Bridgestone(1).txt

5 HOWREY, LLP
6 BY: JOSEPH LAVELLE, ESQ.
6 BY: BRIAN SEAL, ESQ.

7 Counsel for the Defendant

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1 THE COURT: All right. Bridgestone.
2 okay. Do you want to announce your
3 appearances?

4 MR. BLUMENFELD: Your Honor, on the
5 Bridgestone side, Jack Blumenfeld, with my
6 associate, Leslie Polizoti from Morris, Nichols.

7 Robert Masters and Brandon White
8 from Paul Hastings.

9 THE COURT: Good morning.
10 Mr. Horwitz.

Page 2

020207Bridgestone(1).txt

11 MR. HORWITZ: Good morning, Your
12 Honor. Rich Horwitz from Potter Anderson on
13 behalf of Acushnet. And with me today from
14 Howrey, Joe Lavelle and Brian Seal.

15 MR. LAVELLE: Good morning, Your
16 Honor.

17 THE COURT: Good morning.
18 Well, fortunately, I'm familiar with
19 all of you, and we still haven't had a need for a
20 special master. So that's good.

21 With you folks, because I am so
22 familiar and enjoy your company so much, I did a
23 little extra work. And what I'm going to do is
24 give you the decisions on what I think of the

□ 4

1 principal disputes today and then give you a
2 chance to, not to immediately ask me to
3 reconsider, but to bring up anything else that
4 might keep you moving along. That is my hope.

5 So we'll first start out with, and
6 I'm going to put this in a better form, but I
7 wanted to get you a decision today and give you
8 the reasons, because I think it's a serious
9 matter that you've presented.

10 And so I'm going to give you some
11 reasons today, and I'm going to put it in a
12 better form in another probably memorandum
13 opinion or something.

14 All right. Plaintiff, Bridgestone's
15 motion to preclude prior art references.

16 Preclusion of evidence pursuant to the rules is a
Page 3

020207Bridgestone(1).txt

17 strong sanction, which some characterize as
18 extreme, and one that is applied sparingly and
19 only as a remedy for litigation conduct that is
20 clearly unprofessional or inappropriate and
21 prejudicial in the context of the case before the
22 Court.

23 The decision to preclude evidence is
24 within the discretion of the Court based on a

□ 5

1 consideration of the specific conduct complained
2 of and findings regarding that conduct. In this
3 case, I find that, one, the parties are two
4 sophisticated business entities represented by
5 counsel experienced in complex litigation
6 matters, specifically patent litigation.

7 Two, there have been numerous
8 disputes that have arisen between the parties
9 during the pretrial proceedings that required
10 intervention by the Court. And I find that on
11 both sides the disputes were sometimes strategic
12 in nature.

13 Three, the Court finds that the
14 evidence at issue is relevant to defendants'
15 invalidity defenses, but not critical. Defendant
16 has available for its invalidity defense similar
17 evidence.

18 And further, I find that the
19 evidence at issue was available to the defendant
20 at a minimum in the earlier stages of the
21 discovery period.

22 Fourth, I find that the plaintiff
Page 4

020207Bridgestone(1).txt

23 would be required to conduct additional
24 discovery, fact and expert beyond the deadlines

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1 established by the existing Court orders.

2 Additionally, although the
3 extensions of deadlines that would be required
4 may fairly be characterized as moderate, and the
5 time and expense they entail, however, were
6 avoidable or was avoidable.

7 In sum, based on these findings, I
8 conclude that the preclusion in this case is
9 warranted given the circumstances. And,
10 therefore, plaintiff's motion is denied.

11 Now, with regard to plaintiff
12 Bridgestone's motion to compel --

13 MR. BLUMENFELD: Your Honor, I think
14 you said denied. I think our motion would have
15 been granted.

16 THE COURT: Granted. I'm sorry.

17 I meant to say granted.

18 MR. BLUMENFELD: Thank you.

19 THE COURT: The plaintiff,
20 Bridgestone's motion to compel the number of
21 requested admissions is excessive, and therefore,
22 the motion to compel will be denied.

23 With regard to the 30(b)6 notices, I
24 find that the depositions requested are

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1 warranted; however, per the parties' agreement,
2 no revisiting of topics will be permitted during

020207Bridgestone(1).txt
3 the course of the depositions. And I'm going to
4 grant leave to Acushnet to suspend a deposition
5 if they believe that the testimony sought is
6 outside that agreement.

7 And hopefully you'll be able to get
8 me on the phone. And if you can't, you can
9 suspend the deposition and leave, and then I'll
10 take up the matter separately. So it will be
11 important to be careful in the examination during
12 those depositions.

13 All right. I thought that that
14 would -- there's one other, in my view, minor
15 matter pending, which I'll get to, but I thought
16 decision on these matters would help you move
17 along. Is there anything else that you think I
18 could address that would help you move along
19 given the stage of where we are?

20 MR. BLUMENFELD: From our side, I
21 don't think so, Your Honor. We're moving along
22 with expert discovery and have a pretrial
23 conference in May. And I think things are moving
24 in that direction.

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1 THE COURT: All right.

2 MR. LAVELLE: Your Honor, Joe
3 Lavelle, from our side. I would like to be heard
4 for a moment on the order precluding the prior
5 art references, and essentially what I'm going
6 to -- what I'm going to say is that two of these
7 patents are critical to one of our patents. And
8 if they're going to be excluded, that has an

020207Bridgestone(1).txt
9 impact. We won't have evidence on one patent
10 then in our current expert report.

11 And I wondered if there's a
12 mechanism within our system unit to go back and
13 supplement that expert report, because in one of
14 these patents --

15 THE COURT: Is this a portion of the
16 report that -- the portion was included as an
17 exhibit?

18 MR. LAVELLE: Yes. The Falco report
19 on the '791 patent.

20 THE COURT: Sure.

21 MR. LAVELLE: These two patents.

22 THE COURT: In other words, if I
23 made a ruling that affects that report and
24 requires some sort of supplementation, is that

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1 the question?

2 MR. LAVELLE: Yeah. The question
3 is: Your ruling excluding these patents
4 essentially takes away the invalidity defense
5 that Acushnet had on that patent. We don't have
6 a prior art defense, as a practical matter, to
7 that patent anymore. And that's a severe
8 prejudice to the client.

9 You correctly articulated all the
10 factors, and what I wanted to articulate to you
11 first before we talk about what the relief should
12 be, are just really quickly three things, because
13 I know you made a ruling.

14 But first of all, the art came up,

020207Bridgestone(1).txt
15 not the knowledge of the patents, but the fact
16 that they had that core gradient. This is like
17 the brownies. This is something that we didn't
18 learn until the cores were tested, and they were
19 tested in November.

20 And we made cores pursuant to the
21 patents in November and tested them and disclosed
22 the data promptly when we had it. So this was
23 not a sandbagging.

24 This was not people who were holding

□ 10

1 things to the last minute. This was giving them
2 data as soon as we got it.

3 And with respect to the '791 patent,
4 this is pretty much our prior art defense. These
5 are just central and critically important to our
6 invalidity defense. And if you strike this,
7 Acushnet doesn't have, as a practical matter, a
8 prior art invalidity defense on that '791 patent.

9 Our entire theory on that defense is
10 that the cores that are made and disclosed in
11 that '791 patent are no different from the cores
12 that Bridgestone was making before they applied
13 for the patent.

14 And that's essentially what their
15 inventors -- well, what their inventors said in
16 deposition. We asked them in depositions at the
17 end of August and in October, what did you do
18 different? Why are these cores different from
19 the cores you were making before? And they
20 couldn't recall anything.

020207Bridgestone(1).txt
21 And that testimony is what caused us
22 to go back and look at their prior cores. So our
23 position is that they just tried to put a patent
24 off something that was already old. And if you

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1 strike these Bridgestone prior art references,
2 the company doesn't have expert testimony on the
3 invalidity issue in front of it. And so I guess
4 what I'm asking you to do is reconsider.

5 THE COURT: Well, here's what you --
6 with respect to '791, I misunderstood what you
7 were saying.

8 I thought that you wanted to modify
9 an expert report to adjust to these rulings, but
10 what you're really saying is you want me to
11 reconsider the decision. You can certainly --

12 MR. LAVELLE: Both.

20 MR. LAVELLE: I think you have the
21 law exactly correct. And I think perhaps we
22 weren't as articulate as we could have been to
23 explain the importance of this to you.

24 THE COURT: So I think some of the

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1 things you've raised here today were in the
Page 9

020207Bridgestone(1).txt

2 papers about prior testing, and I'm not going to
3 get into this now, because I was going to put
4 that into a fuller explanation in the memorandum
5 opinion.

6 But I want you to feel free to file
7 a motion to reconsider. They'll get a chance to
8 answer it, and then I'll take it up on that
9 basis.

10 I'm not one that's going to take
11 umbrage on the fact that either you think I'm
12 wrong or, in fact, I am wrong. But I think it
13 would be better if you go back and put it in the
14 papers so they can answer it in the same kind of
15 detail you'd like to present it.

16 MR. LAVELLE: That would be fine,
17 Your Honor.

18 THE COURT: I'm happy to consider
19 it, and I'll do it on a timely basis, so it
20 doesn't affect the moving forward.

21 MR. LAVELLE: Just two procedural
22 questions.

23 THE COURT: Sure.

24 MR. LAVELLE: Do you want us to

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1 await your written memorandum?

2 THE COURT: No.

3 MR. LAVELLE: Just file it
4 immediately?

5 THE COURT: No. You -- essentially,
6 you'll get a transcript.

7 MR. LAVELLE: That's fine.

Page 10

020207Bridgestone(1).txt

8 THE COURT: And all I've done is,
9 you know, there's a lot of cases out here that
10 have those factors in them. There's Third
11 Circuit cases. There's Federal Circuit cases.

12 There's District Court cases. I
13 just put them conversationally for this morning,
14 and I'm going to lay them out a little
15 differently in the written thing. You have my
16 order today.

17 MR. LAVELLE: That's fine.

18 THE COURT: So you should start
19 working on your motion to reconsider.

20 MR. LAVELLE: We'll do that
21 immediately. And procedurally if we want to ask
22 for any ability to amend that expert report,
23 we'll just put it into our motion for
24 reconsideration?

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1 THE COURT: That will be fine.

2 MR. LAVELLE: Okay.

3 THE COURT: Mr. Horwitz has
4 something he wants to say to you.

5 MR. HORWITZ: Your Honor, with the
6 new procedures, we're now I think --

7 THE COURT: Oh, no.

8 MR. HORWITZ: -- going to be outside
9 the window. We don't need to do that.

10 So we come back here?

11 THE COURT: The motion to reconsider
12 can be filed immediately.

13 MR. HORWITZ: Within ten days of

Page 11

020207Bridgestone(1).txt

14 today?

15 THE COURT: Ongoing disputes in
16 patent cases, some people are going to find out
17 they're going to file a motion for a notice day,
18 and I'm going to put them for a separate hearing
19 or additional briefing. It all depends on what's
20 presented.

21 But, no, you aren't restricted in
22 this instance, because I've told you you can file
23 it, to the procedure.

24 MR. HORWITZ: Perfect. Thank you.

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1 MR. LAVELLE: Thank you, Your Honor.

2 MR. BLUMENFELD: Your Honor, that's
3 fine. I expect we'll get that motion and we'll
4 respond.

5 THE COURT: Probably get it today
6 from what it sounds like.

7 MR. BLUMENFELD: We may.

8 Mr. Lavelle doesn't have a plane to
9 catch. He's only going to Washington.

10 But we have answering expert
11 reports. I think we're going to proceed on the
12 assumption that what you put out is out. If this
13 comes back in, we'll deal with it when it comes
14 back in, but --

15 THE COURT: Sounds right.

16 MR. BLUMENFELD: Thank you.

17 MR. LAVELLE: Thank you, Your Honor.

18 THE COURT: All right. Thank you
19 very much.

020207Bridgestone(1).txt

20 MR. MASTERS: Thank you, Your Honor.
21 MR. LAVELLE: Thank you, Your Honor.
22 THE COURT: I'm sure you'll be back.
23 (Hearing concluded at 10:50 a.m.)
24

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1 State of Delaware)
2 New Castle County)
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4

5 CERTIFICATE OF REPORTER
6

7 I, Heather M. Triozzi, Registered
8 Professional Reporter, Certified Shorthand
9 Reporter, and Notary Public, do hereby certify
10 that the foregoing record, Pages 1 to 16
11 inclusive, is a true and accurate transcript of
12 my stenographic notes taken on February 2, 2007,
13 2001, in the above-captioned matter.

14
15 IN WITNESS WHEREOF, I have hereunto
16 set my hand and seal this 5th day of February,
17 2007, at Wilmington.

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21 Heather M. Triozzi, RPR, CSR
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020207Bridgestone(1).txt

EXHIBIT B



(12) **United States Patent**
Yamagishi et al.

(10) Patent No.: US 6,780,125 B1
(45) Date of Patent: Aug. 24, 2004

(54) MULTI-PIECE SOLID GOLF BALL

GB 2 306 118 4/1997

(75) Inventors: Hisashi Yamagishi, Chichibu (JP); Hiroshi Higuchi, Chichibu (JP); Junji Hayashi, Chichibu (JP); Akira Kawata, Chichibu (JP)

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European Search Report dated Apr. 25, 2001.

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(73) Assignee: Bridgestone Sports Co., Ltd., Tokyo (JP)

Primary Examiner—Stephen Blau
(74) Attorney, Agent, or Firm—Sughrue Mion, PLLC

(*) Notice: Subject to any disclaimer, the term of this patent is extended or adjusted under 35 U.S.C. 154(b) by 662 days.

(57) ABSTRACT

(21) Appl. No.: 09/129,883

(22) Filed: Aug. 6, 1998

Related U.S. Application Data

(60) Provisional application No. 60/058,563, filed on Sep. 11, 1997.

(30) Foreign Application Priority Data

Aug. 11, 1997 (JP) 9-228902

(51) Int. Cl.⁷ A63B 37/12

(52) U.S. Cl. 473/374; 473/384

(58) Field of Search 473/373, 384

(56) References Cited

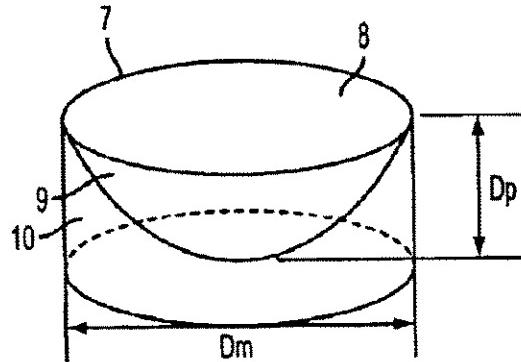
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14 Claims, 3 Drawing Sheets



U.S. Patent

Aug. 24, 2004

Sheet 1 of 3

US 6,780,125 B1

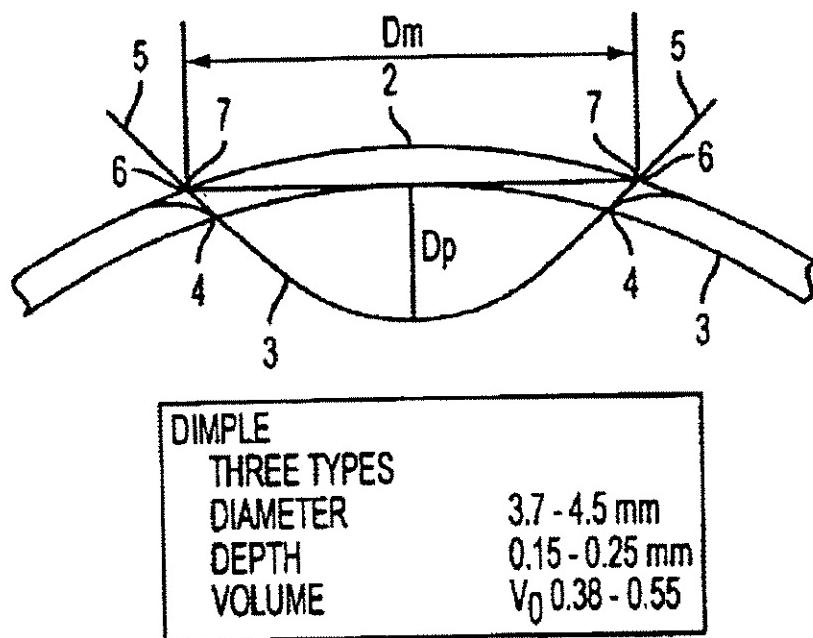


FIG. 1

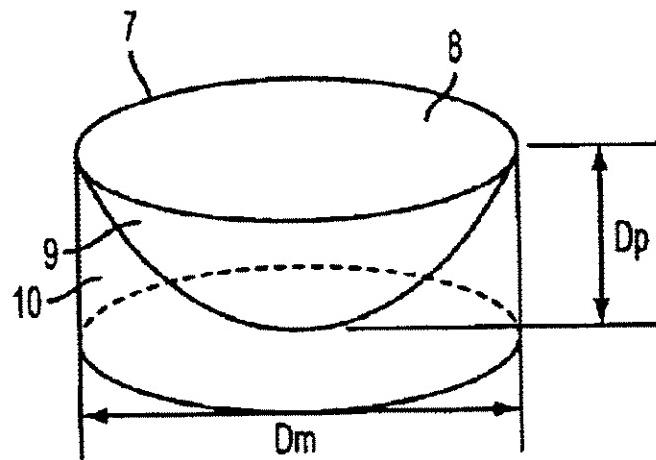


FIG. 2

U.S. Patent

Aug. 24, 2004

Sheet 2 of 3

US 6,780,125 B1

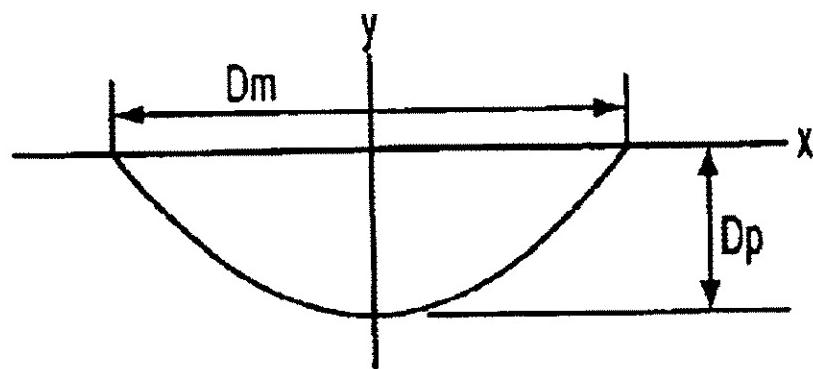


FIG. 3

U.S. Patent

Aug. 24, 2004

Sheet 3 of 3

US 6,780,125 B1

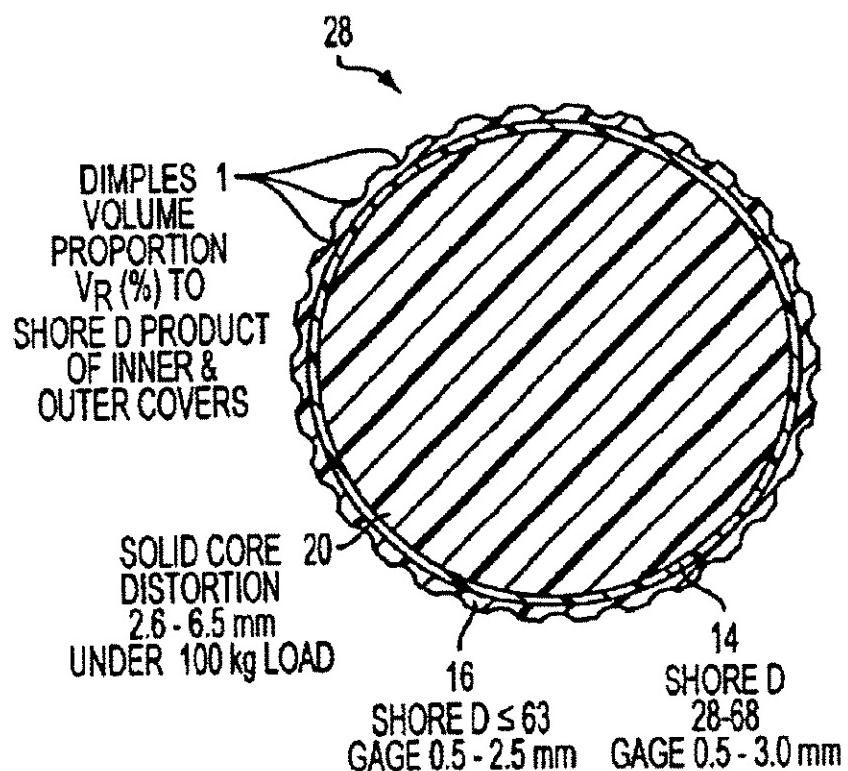


FIG. 4

US 6,780,125 B1

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MULTI-PIECE SOLID GOLF BALL**CROSS REFERRENCE TO RELATED APPLICATION**

This application is an application files under 35 U.S.C. § 111(a) claiming benefit pursuant to 35 U.S.C. § 119(e)(i) of the filing date of the Provincial Application 60/058,563 filed on Sep. 11, 1997 pursuant to 35 U.S.C. § 111(b).

BACKGROUND OF THE INVENTION**1. Field of the Invention**

This invention relates to a multi-piece solid golf ball having a cover of inner and outer layers and more particularly, to a multi-piece solid golf ball in which cover hardness and dimples are optimized to improve flight distance performance.

2. Prior Art

Golf balls are generally classified into solid golf balls in which a solid core is enclosed with at least one layer of cover and wound golf balls in which a wound core in the form of a center ball having thread rubber wound thereon is enclosed with a cover. Numerous modifications were heretofore proposed to improve flight distance properties, spin performance, and controllability.

As one example of such proposals, an approach of increasing a spin rate by forming the cover soft or to low hardness falls under the category of the prior art. In particular, improvements in multi-piece solid golf balls are by adjusting the composition and hardness of the thermoplastic resin of which each cover layer is constructed. For example, if it is desired to increase a spin rate, the outer cover layer coming in direct contact with the club face is formed relatively soft in consideration of a friction phenomenon upon impact. Inversely, if it is desired to decrease a spin rate, the outer cover layer is formed relatively hard.

However, the multi-piece solid golf balls wherein the outer cover layer is formed relatively soft have the problem that a desired spin rate is not always obtained because the hardness of the inner cover layer in contact with the outer cover layer is not optimized. Therefore, the deformation process upon impact differs among the respective layers.

Also proposed were techniques of forming the inner cover layer relatively soft in order to increase a spin rate and forming the outer and inner cover layers relatively soft in order to further increase a spin rate. There arises the problem that the trajectory changes in flight to adversely affect the flight distance.

On the other hand, for those golf balls required to have flight distance performance, it is difficult to form dimples suitable for the spin range and restitution which vary with the cover hardness. Golf balls with dimples of one type suffer from the problem that they rise too high or drop to detract from flight distance performance.

SUMMARY OF THE INVENTION

The present invention has been made under the above-mentioned circumstances and its object is to provide a golf ball comprising a solid core enclosed with two inner and outer layers enabling an increase of flight distance.

Making extensive investigations to achieve the above object, the inventors have found in connection with a multi-piece solid golf ball comprising a solid core and a cover of two inner and outer layers surrounding the core, the outer cover layer being formed in the surface with a plurality

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of dimples, that a spin rate is approximately explained in terms of a product of the Shore D hardnesses of the inner cover layer multiplied by the Shore D hardnesses of the outer cover layer. More particularly, a higher spin rate is obtained when the product of the Shore D hardnesses of the inner and outer layers has a relatively smaller value. Inversely, a reduced spin rate is obtained when the same product has relatively larger value. Accordingly, one effective means for taking full advantage of the spin property dependent on the product of the Shore D hardnesses of the inner and outer layers and improving the flight performance of the golf ball is to divide the range of the product into sub-ranges and form dimples so as to satisfy the following two requirements associated with the sub-ranges of the product. More particularly, it has been found effective as a first requirement to specify a proportion V_R (%) of the total of the volumes of dimple spaces each defined below a plane circumscribed by the dimple edge to the overall volume of a phantom sphere given on the assumption that the golf ball surface is free of dimples. A second requirement is to form at least three types of dimples which are different in at least one of a diameter, a depth, and a value V_o which is the volume of one dimple space defined below a plane circumscribed by the dimple edge divided by the volume of a cylinder whose bottom is the plane and whose height is the maximum depth of the dimple from the bottom. The inventors have also found that to specify the distortion of the solid core and to specify the Shore D hardnesses of the inner and outer cover layers are more effective. The present invention is predicated on this finding.

Specifically, the present invention provides:

- 1) A multi-piece solid golf ball comprising a solid core and a cover of two inner and outer layers surrounding the core, the outer cover layer having a surface formed with a plurality of dimples, characterized in that a product of the Shore D hardnesses of said inner cover layer multiplied by the Shore D hardnesses of said outer cover layer and a proportion V_R (%) of the total of the volumes of dimple spaces each defined below a plane circumscribed by the dimple edge to the overall volume of a phantom sphere given on the assumption that the golf ball surface is free of dimples satisfy any one of the following combinations (1) to (5):
 - (1) the product of Shore D hardnesses of inner and outer cover layers: 1,500 to less than 2,000
 V_R : 0.8 to 1.1%
 - (2) the product of Shore D hardnesses of inner and outer cover layers: 2,000 to less than 2,500
 V_R : 0.75 to 1.05%
 - (3) the product of Shore D hardnesses of inner and outer cover layers: 2,500 to less than 3,000
 V_R : 0.7 to 1%
 - (4) the product of Shore D hardnesses of inner and outer cover layers: 3,000 to less than 3,500
 V_R : 0.65 to 0.95%
 - (5) the product of Shore D hardnesses of inner and outer cover layers: 3,500 to 4,000
 V_R : 0.6 to 0.9%,
- and said dimples include at least three types of dimples which are different in at least one of a diameter, a depth, and a value V_o which is the volume of one dimple space defined below a plane circumscribed by the dimple edge divided by the volume of a cylinder whose bottom is the plane and whose height is the maximum depth of the dimple from the bottom.
- 2) The multi-piece solid golf ball of 1) wherein the solid core has a distortion of 2.6 to 6.5 mm under an applied load of 100 kg.

US 6,780,125 B1

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3) The multi-piece solid golf ball of 1) or 2) wherein both the hardnesses of the inner and outer cover layers are up to 63 in Shore D hardness.

BRIEF DESCRIPTION OF THE DRAWINGS

FIG. 1 is a cross-sectional view of a dimple illustrating how to calculate a value V_o .

FIG. 2 is a perspective view of the dimple illustrating how to calculate a value V_o .

FIG. 3 is a cross-sectional view of the dimple illustrating how to calculate a value V_o .

FIG. 4 is a cross-section of the solid golf ball of this invention.

DETAILED DESCRIPTION OF THE INVENTION

The invention will now be described in more detail. The multi-piece solid golf ball 28 of the invention is defined as comprising a solid core 20 and a cover of $2n$ inner and $2n$ outer layer 14, 16 surrounding the core, the outer cover layer having a surface formed with a plurality of dimples. When the range of the product of the Shore D hardnesses of the inner and outer cover layers is divided into sub-ranges, a dimple parameter can be specified in conjunction with each of the sub-ranges of the product for achieving optimization.

First, the solid core 20 is described. The solid core may be formed of a well-known rubber composition. For example, it is prepared by mixing 1,4-cis-polybutadiene as a base with a well-known crosslinking agent, co-crosslinking agent, filler and so on in a roll mill, introducing a necessary amount of the composition into a solid core-shaping mold, and effecting vulcanization and heat molding. In this regard, the solid core may consist of a single layer or plural layers. In the practice of the invention, the solid core preferably undergoes a distortion or deformation of 2.6 to 6.5 mm, more preferably 2.7 to 6.3 mm, most preferably 2.8 to 6.0 mm under an applied load of 100 kg. A distortion of less than 2.6 mm (hard core) would exacerbate hitting feel. A distortion of more than 6.5 mm (soft core) would result in a ball with loss restitution.

The golf ball of the invention is constructed by forming a cover of two (inner and outer) layer structure 14, 16 around the aforementioned solid core 20. The inner and outer layers may be formed of well-known cover stocks. Specifically, ionomer resins, thermoplastic polyester elastomers, and thermoplastic polyurethane elastomers may be used alone or in admixture of two or more. In the practice of the invention, cover stocks must be selected such that the product of the Shore D hardnesses of the inner cover layer multiplied by the Shore D hardnesses of the outer cover layer fall in the range of 1,500 to 4,000.

The Shore D hardnesses of the inner and outer cover layers may be identical with or different from each other insofar as the product of Shore D hardnesses falls in the range of 1,500 to 4,000. That is, the Shore D hardnesses of the inner cover layer may be substantially identical with the Shore D hardnesses of the outer cover layer. Alternatively, either one of the inner and outer cover layers may be softer or harder than the other. The hardness difference between the inner and outer cover layers may be appropriately determined.

Preferably the outer cover layer 16 has a Shore D hardness of up to 63, more preferably 30 to 62, especially 35 to 61. With a Shore D hardnesses of more than 63, there is a risk that no spin is acquired due to a slip phenomenon between

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the cover and the club face. If the hardness of the outer cover layer is below 30, the ball would lose restitution.

On the other hand, the inner cover layer preferably has a Shore D hardnesses of 28 to 68. Restitution would be lost with an inner cover layer hardness of less than 28 whereas hitting feel would be exacerbated by a hardness above 68.

The method for forming the inner and outer cover layers around the solid core is not critical and can be in accord with conventional ones. Included are a method of enclosing the solid core with a pair of hemispherical half cups of an inner cover layer composition, compression molding to join the cups to the core, placing it in an injection mold, and injecting an outer cover layer composition and another method of forming half cups from inner and outer cover layer compositions, respectively, mating them to form half cups of the two layer structure, enclosing the solid core with the half cups, and effecting compression molding.

The thus formed cover of the inner and outer layers may have any desired gage. Usually the inner cover layer has a gage of 0.5 to 3.0 mm, especially 1.0 to 2.5 mm, the outer cover layer has a gage of 0.5 to 2.5 mm, especially 1.0 to 2.3 mm, and the cover has a total gage of 1.0 to 5.5 mm, preferably 1.5 to 5.0 mm, especially 1.5 to 3.5 mm.

The multi-piece solid golf ball of the invention has a plurality of dimples formed in the outer cover layer. The dimples are formed such that when the product of the Shore D hardnesses of the inner cover layer multiplied by the Shore D hardnesses of the outer cover layer is in the range from 1,500 to 4,000, which is divided into sub-ranges, a factor V_R associated with the dimples, that is, a proportion V_R (%) of the total of the volumes of dimple spaces each defined below a plane circumscribed by the dimple edge to the overall volume of a phantom sphere given on the assumption that the golf ball surface is free of dimples has the following value.

(1) The product of Shore D hardnesses of inner and outer cover layers: 1,500 to less than 2,000

V_R : 0.8 to 1.1%

(2) The product of Shore D hardnesses of inner and outer cover layers: 2,000 to less than 2,500

V_R : 0.75 to 1.05%

(3) The product of Shore D hardnesses of inner and outer cover layers: 2,500 to less than 3,000

V_R : 0.7 to 1%

(4) The product of Shore D hardnesses of inner and outer cover layers: 3,000 to less than 3,500

V_R : 0.65 to 0.95%

(5) The product of Shore D hardnesses of inner and outer cover layers: 3,500 to 4,000

V_R : 0.6 to 0.9%

More preferred ranges of V_R are given below.

(1) The product of Shore D hardnesses of inner and outer cover layers: 1,500 to less than 2,000

V_R : 0.82 to 1.08%

(2) The product of Shore D hardnesses of inner and outer cover layers: 2,000 to less than 2,500

V_R : 0.77 to 1.03%

(3) The product of Shore D hardnesses of inner and outer cover layers: 2,500 to less than 3,000

V_R : 0.72 to 0.98%

(4) The product of Shore D hardnesses of inner and outer cover layers: 3,000 to less than 3,500

V_R : 0.67 to 0.93%

(5) The product of Shore D hardnesses of inner and outer cover layers: 3,500 to 4,000

US 6,780,125 B1

5 V_R : 0.62 to 0.88%

With respect to the aforementioned range, if the value of V_R relative to the product of Shore D hardnesses deviates from the specified range, the result is a prematurely falling trajectory and a reduced flight distance.

The value V_R is the sum of volumes V_p of dimple spaces defined in the golf ball surface to be described later and is calculated according to the following equation:

$$V_R = \frac{V_s}{\frac{4}{3}\pi R^3} \times 100$$

wherein V_s is the sum of the volumes V_p of dimple spaces each below a circular plane circumscribed by the dimple edge and R is a ball radius.

It is noted that V_s in the above equation is represented by the following equation and V_R can be calculated by substituting the value of V_s into the above equation of V_R :

$$V_s = N_1 V_{p_1} + N_2 V_{p_2} + \dots + N_n V_{p_n} = \sum_{i=1}^n N_i V_{p_i}$$

$V_{p_1}, V_{p_2}, \dots, V_{p_n}$ represent the volumes of dimples of different dimensions and N_1, N_2, \dots, N_n represent the number of dimples having the volumes $V_{p_1}, V_{p_2}, \dots, V_{p_n}$, respectively.

In addition to the above-mentioned requirement of V_R value, the dimples formed in the golf ball of the invention must further satisfy the requirement that there are included at least three types of dimples which are different in at least one of a diameter, a depth, and a value V_c which is the volume of one dimple space defined below a plane circumscribed by the dimple edge divided by the volume of a cylinder whose bottom is the plane and whose height is the maximum depth of the dimple from the bottom. If the number of dimple types is less than 3, there arises the problem that the golf ball lofts too high or drops prematurely.

The value V_c associated with the dimple requirement is described below. In the event that the planar shape of a dimple is circular, as shown in FIG. 1, a phantom sphere 2 having the ball diameter and another phantom sphere 3 having a diameter smaller by 0.16 mm than the ball diameter are drawn in conjunction with a dimple 1. The circumference of the other sphere 3 intersects with the dimple 1 at a point 4. A tangent 5 at intersection 4 intersects with the phantom sphere 2 at a point 6 while a series of intersections 6 define a dimple edge 7. The dimple edge 7 is so defined for the reason that otherwise, the exact position of the dimple edge cannot be determined because the actual edge of the dimple 1 is rounded. The dimple edge 7 circumscribes a plane 8 (circle having a diameter D_m). Then, the dimple space 9 located below the plane 8 as shown in FIGS. 2 and 3 has a volume V_p . A cylinder 11 whose bottom is the plane 8 and whose height is the maximum depth D_p of the dimple from the plane 8 has a volume V_q . The ratio V_c of the dimple space volume V_p to the cylinder volume V_q is calculated.

$$V_p = \int_0^{\frac{D_m}{2}} 2\pi x y dx$$

$$V_q = \frac{\pi D_m^2 D_p}{4}$$

6

-continued

$$V_c = \frac{V_p}{V_q}$$

5

In the event that the planar shape of a dimple is not circular, the maximum diameter or length of a dimple is determined, the plane projected shape of the dimple is assumed to be a circle having a diameter equal to this maximum diameter or length, and V_c is calculated as above based on this assumption.

With respect to having dimples of different types according to the invention, dimples of the largest type preferably have a diameter of 3.7 to 4.5 mm, especially 3.8 to 4.3 mm and a depth of 0.15 to 0.25 mm, especially 0.155 to 0.23 mm, and their number is preferably 5 to 80%, especially 10 to 75% of the total dimple number. They are preferably set to have a V_c value of 0.38 to 0.55. More preferably V_c is 0.4 to 0.52.

Among the dimples of different types, dimples of the smallest type preferably have a diameter of 2.0 to 3.7 mm, especially 2.4 to 3.6 mm and a depth of 0.08 to 0.23 mm, especially 0.09 to 0.21 mm, and their number is preferably 1 to 45%, especially 2 to 30% of the total dimple number. They are preferably set to have a V_c value of 0.38 to 0.55, especially 0.4 to 0.52.

The golf ball as a whole should preferably have a V_c value of 0.38 to 0.55, more preferably 0.4 to 0.52, especially 0.42 to 0.5. A V_c value of less than 0.38 is likely to lead to a non-long-lasting trajectory whereas a V_c value of more than 0.55 is likely to lead to a high rise or loft trajectory.

In the practice of the invention the total number of dimples is not critical although usually 360 to 460 dimples, especially 370 to 450 dimples are formed.

The golf ball of the invention can be used as tournament golf balls and constructed in accordance with the Rules of Golf to a diameter of not less than 42.67 mm and a weight of not greater than 45.93 grams.

The multi-piece solid golf ball of the invention has the advantages that various properties including spin, feeling and durability inherent to the multi-piece construction are further improved and an increased flight distance is expected due to the elimination of a high rise or dropping trajectory.

EXAMPLE

Examples of the present invention are given below together with Comparative Examples by way of illustration and not by way of limitation.

Examples and Comparative Examples

Solid cores having a diameter of 36.7 mm were prepared by mixing a rubber composition of the formulation shown in Table 1 in a roll mill and heat compression molding the composition at 155° C. for 15 minutes.

Each solid core was enclosed with cover stocks shown in Table 2 in the order shown in Tables 4 and 5 to form an inner cover layer and an outer cover layer. The outer cover layer on the surface was formed with dimples shown in Tables 3, 4, and 5. Three-piece solid golf balls were obtained in this way.

The golf balls thus obtained were examined for flight distance and trajectory by the following tests. The results are shown in Tables 4 and 5.

Flight Performance

Using a swing robot by True Temper Co., the ball was hit with a driver at a head speed of 48 m/sec. (#W1/TIS48) to measure a spin, carry and total distance.

US 6,780,125 B1

7
Trajectory

Twelve golf balls of each example were hit under the same conditions as in the flight performance test to visually observe a trajectory.

TABLE 1

Solid core composition (pbw)	I	II	III	IV
1,4-polybutadiene (cis structure)	100	100	100	100
Zinc acrylate	32	32	23	33
Dicumyl peroxide	1.2	1.2	1.2	1.2
Antioxidant	0.1	0.1	0.1	0.1
Zinc oxide	5	5	5	4
Barium sulfate	13.2	23.1	26.8	0
Peptizer	1	1	1	0

TABLE 2

Cover stock (pbw)	A	B	C	D	E	F
Hytrell 4047	100	—	—	—	—	—
Surlyn 8120	—	50	—	30	—	—
Himilan 1557	—	50	—	—	—	50
Himilan 1856	—	—	90	—	—	—
N0825J	—	—	10	—	—	—
Himilan 1605	—	—	—	20	—	50
Himilan 1706	—	—	—	50	—	—
PANDEX T-7890	—	—	—	—	100	—

Hytrell 4047: Toray duPont K.K., polyester base thermoplastic elastomer
 N0825J: Mitsui duPont K.K., ethylene/methacrylic acid/methacrylate terpolymer (nudel)
 Surlyn 8120: E. I. duPont, ionomer resin
 Himilan 1557: Mitsui duPont Polymers K.K., ionomer resin
 Himilan 1856: Mitsui duPont Polymers K.K., ionomer resin
 Himilan 1605: Mitsui duPont Polymers K.K., ionomer resin
 Himilan 1706: Mitsui duPont Polymers K.K., ionomer resin
 PANDEX T-7890: Dai-Nihon Ink Chemical Industry K.K., thermoplastic polyurethane elastomer

Note that an appropriate amount of titanium dioxide was blended in resin compositions A to F.

TABLE 3

Type	Diameter (mm)	Depth (mm)	V _d	Number	V _R (%)
1	4.100	0.195	0.440	32	0.89
	4.200	0.195	0.440	40	
	4.000	0.195	0.440	184	
	3.900	0.195	0.440	16	
	3.400	0.195	0.440	104	
	3.350	0.195	0.440	16	
2	4.000	0.210	0.450	32	0.86
	4.200	0.180	0.450	40	
	4.000	0.165	0.450	184	
	3.900	0.200	0.450	16	
	3.400	0.155	0.450	104	
	3.350	0.160	0.450	16	
3	3.850	0.160	0.500	288	0.80
	3.250	0.150	0.500	72	
	2.500	0.140	0.500	42	
4	3.850	0.175	0.525	288	0.93
	3.250	0.170	0.530	72	
	2.500	0.170	0.530	42	
5	4.000	0.160	0.480	114	0.77
	4.000	0.180	0.480	42	
	3.650	0.140	0.480	180	
	3.600	0.140	0.480	24	
	2.550	0.100	0.480	50	
6	3.900	0.150	0.470	240	0.66
	3.200	0.150	0.470	120	
7	3.850	0.170	0.465	340	1.04
	3.600	0.170	0.465	140	
8	3.850	0.185	0.460	340	1.12
	3.600	0.185	0.460	140	

7
8

TABLE 4

	E1	E2	E3	E4	E5
<u>Solid core</u>					
Composition	I	II	III	IV	III
Hardness* (mm)	3.0	3.0	4.5	2.8	4.5
<u>Inner cover layer</u>					
Stock	A	C	D	A	B
Shore D hardness	40	49	55	40	58
Gage (mm)	1.5	1.5	1.5	1.5	1.5
<u>Outer cover layer</u>					
Stock	B	D	B	E	F
Shore D hardness	58	55	58	42	60
Gage (mm)	1.5	1.5	1.5	1.5	1.5
Dimple type	1	2	3	4	5
Inner layer Shore D	2320	2695	3190	1680	3480
D x outer layer Shore D					
V _R (%)	0.89	0.86	0.80	0.93	0.77
#W1/HS48					
20					
Spin (rpm)	2530	2540	2450	2680	2250
Carry (m)	225	229	228	228	227
Total (m)	255	257	258	257	258
25	Trajectory	somewhat rising, similar, long-lasting, relatively low	liner-like, long-lasting, ball	rising, similar to balata	liner-like, long-lasting, ball
			ball	medium trajectory	medium trajectory
30					

*a distortion (mm) of the solid core under an applied load of 100 kg

TABLE 5

	CE1	CE2	CE3	
<u>Solid core</u>				
Composition	I	III	IV	
Hardness* (mm)	3.0	4.5	2.8	
<u>Inner cover layer</u>				
Stock	A	D	A	
Shore D hardness	40	55	40	
Gage (mm)	1.5	1.5	1.5	
<u>Outer cover layer</u>				
Stock	B	B	E	
Shore D hardness	58	58	42	
Gage (mm)	1.5	1.5	1.5	
Dimple type	6	7	8	
Inner layer Shore D x outer layer Shore D	2320	3190	1680	
50	V _R (%)	0.73	1.04	1.12
#W1/HS48				
45				
Spin (rpm)	2530	2450	2680	
Carry (m)	220	218	217	
Total (m)	247	243	245	
55	Trajectory	liner-like, high	liner-like, low, dropping	liner-like, low, dropping

*a distortion (mm) of the solid core under an applied load of 100 kg

As seen from the results of Examples, the multi-piece solid golf balls of the invention exhibit a satisfactory trajectory and are excellent in all of spin, carry, and total flight distance.

In contrast, the multi-piece solid golf ball of Comparative Example 1 wherein V_R is below the specified range associated with the product of the Shore D hardnesses of the inner and outer cover layers was inferior in flight distance performance. The multi-piece solid golf balls of Comparative

US 6,780,125 B1

9

Examples 2 and 3 wherein V_R is above the specified range was inferior in flight distance performance and exhibited a dropping trajectory.

What is claimed is:

1. A multi-piece solid golf ball comprising; a solid core and a cover consisting of inner and outer layers surrounding the core, the outer cover layer having a surface formed with a plurality of dimples,

said solid core having a distortion of 2.8 to 6.5 mm under an applied load of 100 kg, and

a product of the Shore D hardnesses of said inner cover layer multiplied by the Shore D hardness of said outer cover layer and a proportion V_R (%) of the total of the volumes of dimple spaces each defined below a plane circumscribed by the dimple edge to the overall volume of a phantom sphere given on the assumption that the golf ball surface is free of dimples satisfy any one of the following combinations (1) to (5):

(1) the product of Shore D hardnesses of inner and outer cover layers: 1,500 to less than 2,000

V_R : 0.8 to 0.93%

(2) the product of Shore D hardnesses of inner and outer cover layers: 2,000 to less than 2,500

V_R : 0.75 to 1.05%

(3) the product of Shore D hardnesses of inner and outer cover layers: 2,500 to less than 3,000

V_R : 0.7 to 1%

(4) the product of Shore D hardnesses of inner and outer cover layers: 3,000 to less than 3,500

V_R : 0.65 to 0.95%

(5) the product of Shore D hardnesses of inner and outer cover layers: 3,500 to 4,000

V_R : 0.6 to 0.9%,

and said dimples include at least three types of dimples which are different in at least one of, diameter, depth, and value V_o which is the volume of one dimple space defined below a plane circumscribed by the dimple edge divided by the volume of a cylinder whose bottom is the plane and whose height is the maximum depth of the dimple from the bottom; and

wherein both the hardness of the inner and outer cover layers are up to 63 in Shore D hardness.

2. A multi-piece solid golf ball comprising; a solid core and a cover consisting of inner and outer layers surrounding the core, the outer cover layer having a surface formed with a plurality of dimples,

said solid core having a distortion of 2.8 to 3.0 mm under an applied load of 100 kg, and

a product of the Shore D hardnesses of said inner cover layer multiplied by the Shore D hardness of said outer cover layer and a proportion V_R (%) of the total of the volumes of dimple space each defined below a plane circumscribed by the dimple edge to the overall volume of a phantom sphere given on the assumption that the

10

golf ball surface is free of dimples satisfy any one of the following combinations (1) to (5):

(1) the product of Shore D hardnesses of inner and outer cover layers: 1,500 to less than 2,000

V_R : 0.8 to 1.1%

(2) the product of Shore D hardnesses of inner and outer cover layers: 2,000 to less than 2,500

V_R : 0.75 to 1.05%

(3) the product of Shore D hardnesses of inner and outer cover layers: 2,500 to less than 3,000

V_R : 0.7 to 1%

(4) the product of Shore D hardnesses of inner and outer cover layers: 3,000 to less than 3,500

V_R : 0.65 to 0.95%

(5) the product of Shore D hardnesses of inner and outer cover layers: 3,500 to 4,000

V_R : 0.6 to 0.9%,

and said dimples include at least three types of dimples which are different in at least one of, diameter, depth, and value V_o which is the volume of one dimple space defined below a plane circumscribed by the dimple edge divided by the volume of a cylinder whose bottom is the plane and whose height is the maximum depth of the dimple from the bottom.

3. A multi-piece solid golf ball of claim 2, wherein both the hardness of the inner and outer cover layer are up to 63 in Shore D hardness.

4. The multi-piece solid golf ball of claim 2, wherein said solid cow has a distortion of 2.8 to 6.0 mm under an applied load of 100 kg.

5. The multi-piece golf ball of claim 2, wherein said outer cover layer has a Shore D hardness in the range of 30 to 62.

6. The multi-piece golf ball of claim 2, wherein the inner cover layer has a Shore D hardnesses in the range of 28 to 68.

7. The multi-piece golf ball of claim 2, wherein said inner cover layer has a gage in the range of 0.5 to 3.0 mm.

8. The multi-piece golf ball of claim 2, wherein said outer cover layer has a gage in the range of 0.5 to 25 mm.

9. The multi-piece golf ball of claim 2, wherein said cover has a total gage of 1.0 to 5.0 mm.

10. The multi-piece golf ball of claim 2, wherein said dimples have diameters such that a largest diameter is in the range of 3.7 to 4.5 mm.

11. The multi-piece golf ball of claim 2, wherein dimple depth for a largest size dimple is in the range of 0.15 to 0.25 mm.

12. The multi-piece golf ball of claim 2, wherein V_o is in a range of 0.4 to 0.52 for a largest size dimple.

13. The multi-piece golf ball of claim 2, wherein V_o for the golf ball as a whole is in the range 0.38 to 0.55.

14. The multi-piece golf ball of claim 2, wherein dimples of a smallest type have a diameter in the range of 2.0 to 3.7 mm and a depth in the range of 0.08 to 0.23 mm.

* * * * *

EXHIBIT C

FULLY REDACTED

EXHIBIT D

FULLY REDACTED

EXHIBIT E

**IN THE UNITED STATES DISTRICT COURT
FOR THE DISTRICT OF DELAWARE**

BRIDGESTONE SPORTS CO., LTD.,)	
and BRIDGESTONE GOLF, INC.,)	
)	
Plaintiffs,)	
)	
v.)	
)	
ACUSHNET COMPANY,)	C. A. No. 05-132 (JJF)
)	
Defendant.)	
)	DEMAND FOR JURY TRIAL
ACUSHNET COMPANY,)	
)	
Counterclaim Plaintiff,)	
)	
v.)	
)	
BRIDGESTONE SPORTS CO., LTD.,)	
and BRIDGESTONE GOLF, INC.,)	
)	
Counterclaim Defendant.)	

**ACUSHNET'S OBJECTIONS AND RESPONSES TO
BRIDGESTONE'S FIRST SET OF INTERROGATORIES
DIRECTED TO ACUSHNET (NOS. 1-24)**

Pursuant to Rule 33 of the Federal Rules of Civil Procedure, defendant and counterclaim plaintiff Acushnet Company (“Acushnet”) hereby responds to *the First Set of Interrogatories Directed to Acushnet (Nos. 1-24)* (“First Set of Interrogatories”) of defendants Bridgestone Sports Co., Ltd. and Bridgestone Golf, Inc. (collectively, “Bridgestone”).

GENERAL STATEMENT

In responding to Bridgestone’s First Set of Interrogatories, Acushnet does not waive any objection that may be applicable to: (a) the use, for any purpose, of any information or documents given in response to Bridgestone’s First Set of Interrogatories; or (b) the admissibility, relevancy, or materiality of any information or documents to any issue in this case.

United States Patent No. 5,024,444 to Yamagishi et al., titled "Golf Ball" (issued Jun. 18, 1991).

Interrogatory No. 5:

Separately, for each claim of the Bridgestone patents-in-suit that Acushnet contends is invalid, identify all Prior Art and/or Prior Art Golf Balls that Acushnet contends affects or relates to the validity of the Bridgestone patents-in-suit.

Response to Interrogatory No. 5:

Acushnet incorporates all of its General Objections and Objections to Definitions as though fully set forth herein and further specifically objects to this interrogatory as overly broad to the extent it seeks information protected by attorney-client privilege and/or work-product immunity. Acushnet further objects to this interrogatory as premature, overly broad and unduly burdensome. Bridgestone, with the service of this First Set of Interrogatories (Nos. 1-24) has just identified which claims it believes are infringed by Accused Acushnet Products. Acushnet is continuing its investigation of the Bridgestone patents-in-suit. Accordingly, Acushnet reserves the right to supplement, amend or change any part of the entirety of its response to this interrogatory. Without waiving, and subject to, these objections, Acushnet responds as follows:

To the extent that Bridgestone claims that the Bridgestone patents-in-suit cover the Accused Acushnet products, then the claims of the Bridgestone patents-in-suit are invalid for at least the following reasons:

Bridgestone Patent	Claim No.	Prior Art Related to Validity
6,679,791	1	<ul style="list-style-type: none"> • United States Patent No. 6,390,935 to Kazushige Sugimoto, titled “Three-Piece Solid Golf Ball” (effective filing date Oct. 7, 1999). • United States Patent No. 6,465,578 to Bissonnette et al., titled “Low Compression, Resilient Golf Balls Including an Organosulfur Catalyst and Method for Making Same” (effective filing date Dec. 24, 1998). • EP 0 577 058 B1 to Wilson Sporting Goods Company, titled “Golf Ball with Improved Cover” (published Jan. 5, 1994). • Top Flite System C golf ball manufactured by the Top Flite Golf Company. • Tour Stage U-Spin golf Ball manufactured by Bridgestone Sports, Ltd.
	2	<ul style="list-style-type: none"> • United States Patent No. 6,390,935 to Kazushige Sugimoto, titled “Three-Piece Solid Golf Ball” (effective filing date Oct. 7, 1999). • United States Patent No. 6,465,578 to Bissonnette et al., titled “Low Compression, Resilient Golf Balls Including an Organosulfur Catalyst and Method for Making Same” (effective filing date Dec. 24, 1998). • EP 0 577 058 B1 to Wilson Sporting Goods Company, titled “Golf Ball with Improved Cover” (published Jan. 5, 1994). • Top Flite System C golf ball manufactured by the Top Flite Golf Company. • Tour Stage U-Spin golf Ball manufactured by Bridgestone Sports, Ltd.

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Bridgestone Patent	Claim No.	Prior Art Related to Validity
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6,780,125	2	<ul style="list-style-type: none"> • United States Patent No. 5,779,563 to Yamagishi et al., titled “Multi-Piece Solid Golf Ball” (issued Jul 14, 1998). • JP 09-056848 to Bridgestone Sports, Ltd., titled “Multipiece Solid Golf Ball” (published Mar. 4, 1997). • WO 97/09093 to Acushnet Company, titled “Enhanced Lofting Golf Balls” (published Mar. 13, 1997). • Altus Newing Massy golf ball manufactured by Bridgestone Sports, Ltd. • Precept Dynawing Double Cover S+ golf ball manufactured by Bridgestone Sports, Ltd.

it seeks information that is subject to the attorney-client privilege and/or attorney work-product privilege.

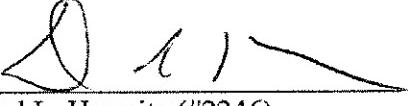
Without waiver and subject to these objections, Acushnet identifies Jeff Dalton of the Acushnet Company, located at 333 Bridge Street, Fairhaven, Massachusetts 02719-0965 as a person having knowledge of the testing of the Bridgestone products.

As To Objections:

POTTER ANDERSON & CORROON LLP

OF COUNSEL:

Alan M. Grimaldi
Joseph P. Lavelle
Matthew J. Moore
Vivian S. Kuo
HOWREY LLP
1299 Pennsylvania Avenue, N.W.
Washington, DC 20004
Telephone (202) 783-0800

By: 
Richard L. Horwitz (#2246)
David E. Moore (#3983)
Hercules Plaza, 6th Floor
1313 North Market Street
P. O. Box 951
Wilmington, DE 19899-0951
(302) 984-6000
rhorwitz@potteranderson.com
dmoore@potteranderson.com

Dated: July 7, 2005

Attorneys for Defendant Acushnet Company

689610

CERTIFICATE OF SERVICE

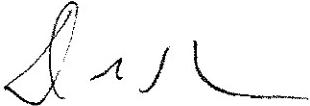
I, David E. Moore, hereby certify that on July 7, 2005, a true and correct copy of the within document was caused to be served on the attorney of record at the following addresses as indicated:

VIA HAND DELIVERY

Jack B. Blumenfeld
Maryellen Noreika
Leslie A. Polizoti
Morris, Nichols, Arsht & Tunnell
1201 N. Market Street
Wilmington, DE 19801

VIA FEDERAL EXPRESS

Robert M. Masters
John T. Callahan
Raja Saliba
Sughrue Mion, PLLC
2100 Pennsylvania Avenue, NW
Washington, DC 20037



David E. Moore

680013

EXHIBIT F

FULLY REDACTED

EXHIBIT G

Paul Hastings

Paul, Hastings, Janofsky & Walker LLP
875 15th Street, N.W. • Washington, DC 20005
telephone 202 551 1700 • facsimile 202 551 1705 • www.paulhastings.com

Atlanta
Beijing
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Orange County
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Paris
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San Francisco
Shanghai
Stamford
Tokyo
Washington, DC

(202) 551-1754
brandonwhite@paulhastings.com

December 23, 2006

70416.00002

VIA FACSIMILE (202) 383-6610

Brian S. Seal, Esq.
Howrey LLP
1299 Pennsylvania Ave., N.W.
Washington, DC 20004

Re: Bridgestone Sports v. Acushnet

Dear Brian,

I write in regard to several issues raised by Acushnet's recent supplementation of its discovery responses.

1. Translations of Prior Art

Acushnet's invalidity contentions refer to translations of Japanese patent documents. (*See, e.g.*, Tab A2 ('652 patent) to *Acushnet's Sixth Supplemental Responses to Bridgestone's First Set of Interrogatories Directed To Acushnet* at Japanese Kokai Publication No. 02-092378). Please produce all English-language translations of foreign-language documents cited in Acushnet's invalidity contentions immediately.

2. Acushnet's Refusal To Answer Bridgestone's Requests for Admissions

Starting with Bridgestone's Request for Admission No. 68, Acushnet has failed to answer based on the assertion that Bridgestone's 149 Requests exceed the number of requests for admissions authorized in the Rule 16 Scheduling Order (D.I. 18). We disagree with Acushnet's position.

The Rule 16 Scheduling Order authorized 150 requests for admission. Bridgestone's has propounded only 150 requests. Further, requests for admissions are designed to simplify the issues for trial by eliminating non-controversial issues from dispute. (*See Advisory Committee Notes to Rule 36*). Bridgestone's admissions are narrowly tailored to the issues in dispute in this case and designed to simplify the issues for trial. Acushnet's failure to answer more than half of Bridgestone's Request is improper and serves only to unnecessarily complicate this case.

Brian Seal
December 23, 2006
Page 2

Please let us know by December 29, 2006 if Acushnet intends to stand on its objections.

3. Acushnet's Identification of Newly-Asserted Prior Art

Acushnet's supplement response to Bridgestone Interrogatory No. 4 identifies several new references not previously identified. For example, with respect to the '707 patent, Acushnet now identifies the Altus Newing Massy golf balls as alleged prior art. With respect to the '791 patent, Acushnet added five patents as allegedly anticipatory references, more than doubling the number of allegedly anticipatory references it intends to assert. This is improper on several grounds.

First, as set forth in our previously-filed Motion to Compel (D.I. 22), Acushnet has failed to narrow its infringement contentions as ordered by the Court. Adding new references at this stage of the case only compounds this problem.

Second, the Court ordered all invalidity contentions to be disclosed by August 11, 2006. (D.I. 154 at ¶3). Adding new prior art after August 11, 2006 is foreclosed by the Court's Order.

Accordingly, please let us know by December 29, 2006 if Acushnet intends to proceed with the infringement positions set forth in *Acushnet's Sixth Supplemental Responses To Bridgestone's First Set of Interrogatories Directed to Acushnet*.

We continue to review Acushnet's discovery responses, and reserve the right to later identify other issues that may arise.

Sincerely,



Brandon M. White
for PAUL, HASTINGS, JANOFSKY & WALKER LLP

Paul Hastings

Paul, Hastings, Janofsky & Walker LLP
875 15th Street, N.W. • Washington, DC 20005
telephone 202 551 1700 • facsimile 202 551 1705 • www.paulhastings.com

FACSIMILE TRANSMISSION

to:	company/office:	facsimile:	telephone:
Brian Seal	Howrey LLP	(202) 383-6610	(202) 383-6904
from:	facsimile:	telephone:	initials:
Brandon M. White	(202) 551-1705	(202) 551-1754	BMW2
client name:	Bridgestone Sports	client matter number:	70416.00002
date:	December 22, 2006	pages (with cover):	3

comments:

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PAUL HASTINGS

001

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EXHIBIT H

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EXHIBIT I



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February 16, 2007

File 00634.0002

BY FACSIMILE

Brandon M. White, Esq.
 Paul, Hastings, Janofsky & Walker LLP
 875 15th Street, N.W.
 Washington, D.C. 20005

Re: *Bridgestone Sports Co. v. Acushnet Co.,*
 C.A. No. 05-132 (JJF) (D. Del.)
Acushnet's Core Recipe Data

Dear Brandon:

In the course of preparing Acushnet's witness for Bridgestone's Tenth 30(b)(6) Notice on the cores of the accused Acushnet products, we realized that our production of change notices from Ball Plant II was last produced only through August 2005. Accordingly, we are providing you with copies of the change notices that have been entered since August 2005. In addition, for this deposition we are providing a paper set of recipe change notices from Ball Plant III largely duplicative of the information provided in November in the form of Lotus Notes. Finally, given the topics on which the Court has ordered Acushnet to prepare and provide a witness for this deposition, we are planning to have available at the deposition for review by the witness and Bridgestone Acushnet's Mesabi Mix Vision software in its native electronic format.

With regard to Bridgestone's Fifth through Eighth 30(b)(6) Notices, topics 5 and 6, we repeat our offer to make the entire QAS system available to you for your inspection. We are in the process of finding out whether we can make the database available for review in Washington – whether at a deposition or otherwise – and will let you know shortly.

Please let me know if you have any questions.

Regards,

Brian S. Seal

Enclosure

EXHIBIT J

NOV. 3. 2006 6:53PM HOWREY SIMON ARNOLD

NO. 568 P. 2



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November 3, 2006

BY FACSIMILE

Brandon M. White, Esq.
 Paul, Hastings, Janofsky & Walker LLP
 875 15th Street, N.W.
 Washington, D.C. 20005

Re: *Bridgestone Sports Co. v. Acushnet Co.*,
 C.A. No. 05-132 (JJF) (D. Del.)
Response to Your Letter of October 26

Dear Brandon:

Thank you for your letter of October 26 regarding alleged discovery deficiencies. We respond herein to the matters raised in your letter.

1. Deposition Issues

a. Deposition of Mr. Shimosaka

Per our e-mail correspondence of October 31, we have agreed to depose Mr. Shimosaka on November 16-17.

b. Depositions of Dr. Bissonnette and Mr. Jones

Per my e-mail to Terry Wikberg on Monday, October 30, Mr. Jones agreed to move his deposition from November 2 to November 3.

Per our e-mail correspondence of October 31, you have agreed to depose Dr. Bissonnette on November 15.

c. Depositions of Mr. Drumm, Ms. Olsen and Mr. Williams

While we note your objection to the addition of Mr. Drumm, Ms. Olson and Mr. Williams to Acushnet's initial disclosures, your letter acknowledges that they were added prior to the close of fact discovery. Further, we have agreed to offer Ms. Olson and Mr. Williams for deposition after the close of fact discovery. We are obtaining available dates from them and will

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HOWREY SIMON ARNOLD

NO. 568 P. 3

HOWREY

Brandon M. White, Esq.

November 3, 2006

Page 2

inform you promptly once we have them. Acushnet has agreed not to call Mr. Drummond as a witness at trial.

d. JSR Witness

The topics for Mr. Morikawa's deposition are:

(1) the manufacturing processes used by JSR to manufacture the polybutadiene rubbers sold by JSR to Bridgestone for use in golf ball cores, including but not limited to BR 730, from their initial manufacture to the present;

(2) the manufacturing processes used by JSR to manufacture BR 11 and BR 18, from their initial manufacture to the present;

(3) the design, development and manufacturing targets or specifications set by JSR for its polybutadiene rubbers, including but not limited to BR 11, BR 18, and BR 730;

(4) the quality control procedures used by JSR in the manufacture of its polybutadiene rubbers, including but not limited to BR 11, BR 18, and BR 730; and

(4) the origin and chain of custody for the BR 11 and BR 18 polybutadiene rubber samples produced by Bridgestone to Acushnet.

We will serve a formal deposition notice on Monday that identifies the above categories.

e. Bridgestone's 10th Rule 30(b)(6) Notice

Per my letter of July 28, we maintain the Bridgestone's 10th Notice of 30(b)(6). Deposition regarding, *inter alia*, the research, development, and manufacturing of the cores of the accused Acushnet products is duplicative of the topics in Bridgestone's 5th through 8th Notices. As I stated in our e-mail correspondence today, we would like more specific details from you regarding the information you believe justifies further deposition on those topics so that we may make an informed decision about whether to offer an additional witness.

f. Bridgestone's 11th Rule 30(b)(6) Notice

As I indicated in my e-mail of today, we will provide a document to you early next week in response to Bridgestone's 11th Rule 30(b)(6) Notice.

NOV. 3, 2006 6:53PM HOWREY SIMON ARNOLD

NO. 568 P. 4

Brandon M. White, Esq.
November 3, 2006
Page 3**HOWREY****2. Missing RM Codes**

We are investigating the existence of data sheets or material specifications for the specific RM codes identified in John Shin's letter of August 1, 2006. To the extent any such data sheets or material specifications exist, we will produce them shortly.

3. Electronic Databases for Recipes, Change Notices and Recipe Changes

In your letter of September 27, 2006, you request that Acushnet produce copies of a number of databases, including its change notice database, recipe change databases and Ball Manufacturing Information database in their native electronic formats. Having already produced the relevant documents from these databases in hardcopy, we do not believe we are obligated to reproduce them, in their native electronic format or otherwise. If Bridgestone can demonstrate some basis for such reproduction, however, we remain willing to consider your request.

In addition, we are undertaking a specific review of the databases referenced in your letter. To the extent responsive, non-privileged documents from any such database have not yet been produced, we will agree to produce them in their native electronic format, if possible. We expect reciprocity from Bridgestone, however, so that we would receive any as yet unproduced documents from Bridgestone in their native electronic formats. Please confirm whether you agree to this mutual arrangement.

4. Documents Identified During the Deposition of Ken Welchman**a. QAS/SPC Documentation and Testimony**

We disagree strongly with your statement that Mr. Dalton "was unprepared to testify" on the topics related to quality control. To the contrary, Mr. Dalton testified extensively on "[t]he quality control and compliance employed by Acushnet in the design and manufacture of each and every model and version of the [accused Acushnet golf balls]" and "[t]he testing of the [accused Acushnet golf balls], and all preliminary, intermediary and end product components, including without limitation cores, cover layers and intermediate layers by or for Acushnet in developing and manufacturing of the [accused Acushnet golf balls]." See, for example, Dalton Depo., July 25, 2006, pp. 407:15-411:18.

In support of your statement that Mr. Dalton was "unprepared," you cite a portion of Mr. Dalton's testimony discussing a specific document created by Bridgestone from the native-format QAS data produced by Acushnet. Considering the breadth of the topics in your notices related to quality control, it is unreasonable to expect Mr. Dalton to be familiar with every such document, particularly when it was not identified in your request. If you have specific questions about that document, we can attempt to answer them via written correspondence.

NOV. 3. 2006 6:54PM
HOWREY LLP

HOWREY SIMON ARNOLD

NO. 568 P. 5

Brandon M. White, Esq.
November 3, 2006
Page 4

Otherwise, given that you have obtained extensive testimony from Mr. Dalton on Acushnet's quality control procedures as set forth in your notices and have also deposed Mr. Welchman, who is Acushnet's Director of Quality for Golf Ball Operations, we see no need to provide additional witnesses on those topics. We remain willing to discuss this matter further, however, should you articulate a sufficient justification for additional testimony.

b. Pro V1* Information

We are collecting the QAS data for the Pro V1 Star golf ball and will produce it to you shortly.

c. Finished Ball Specifications

We are investigating the existence of "finished ball specifications" or finished core specifications for the accused Acushnet products. To the extent any responsive, non-privileged documents exist, we will produce them shortly.

d. Recipe Changes with Recipes Printed Thereon (Ball Plant III)

We are in the process of investigating whether there are any recipe changes from Ball Plant III that have the full recipes printed on them. To the extent any responsive, non-privileged documents exist, we will produce them.

e. QAS Data

Acushnet has conducted a reasonable search for all QAS data in its possession, custody, or control for the accused products. Other than the data for the Pro V1 Star golf ball identified above (which will be produced shortly), Acushnet has produced all responsive data located as a result of that search.

f. Tech Data Sheets

We are investigating the existence of any "Tech Data Sheets" that relate to the accused Acushnet products. To the extent any responsive, non-privileged documents exist, we will produce them shortly.

g. Bills of Materials

Acushnet has conducted a reasonable search for all Bills of Material in its possession, custody, or control for the accused products and has produced all responsive data located as a result of that search.

NOV. 3. 2006 6:54PM
HOWREY LLP

HOWREY SIMON ARNOLD

NO. 568 P. 6

Brandon M. White, Esq.
November 3, 2006
Page 5**5. Documents Identified During the Deposition of Eric Bartsch****a. Intermediate Layer and Cover Layer Change Database**

We are investigating the existence of any databases that exist at Acushnet for data regarding changes in intermediate layers and/or cover layers for the accused Acushnet products. To the extent any such data exists that is responsive and non-privileged, we will produce it shortly.

b. Production and Cost Information

We are investigating the existence of any Peoplesoft system documents concerning production and/or cost information for the accused Acushnet products. To the extent any responsive, non-privileged documents exist, we will produce them shortly.

6. Documents Identified During the Deposition of Chris Cavallaro**a. Golf Ball Data Charts from the Product Development Database**

Acushnet has conducted a reasonable search – including a search of the product development database – for all Golf Ball Data Charts in its possession, custody, or control for the accused products, and has produced all responsive documents located as a result of that search.

b. Pro V1 and Pro V1* (Star) Core Recipes in PHR (Parts-Per-Hundred)

Any responsive, non-privileged documents provided by Mr. Cavallaro to Mr. Lester for this litigation have been produced. We are investigating whether Mr. Cavallaro has any additional responsive, non-privileged documents, including parts-per-hundred formulations for the Pro V1 and Pro V1 Star golf balls. To the extent any responsive, non-privileged documents exist, we will produce them shortly.

c. Performance Testing Between US and Japan Versions of Pro V1 Golf Balls

We are investigating the existence of any responsive, non-privileged documents concerning performance testing between the US and Japan versions of the Pro V1 golf balls. We note, however, that any such documents created after the March 7, 2005 filing date are subject to Acushnet's General Objection No. 14 in response to Bridgestone's Requests for the Production of Documents.

NOV. 3, 2006 6:54PM
HOWREY

HOWREY SIMON ARNOLD

NO. 568 P. 7

Brandon M. White, Esq.
November 3, 2006
Page 6**d. Additional Pro V1 Binder**

As noted above in subparagraph (b), any responsive, non-privileged documents provided by Mr. Cavallaro to Mr. Lester for this litigation have been produced. We are investigating whether Mr. Cavallaro has any additional responsive, non-privileged documents, including any additional Pro V1 binders. To the extent any responsive, non-privileged documents exist, we will produce them shortly.

e. Notebooks for "Latest Version" of Pro V1, Pro V1* (Star), and NXT Tour

As noted above in subparagraphs (b) and (d), any responsive, non-privileged documents provided by Mr. Cavallaro to Mr. Lester for this litigation have been produced. We are investigating whether Mr. Cavallaro has any additional responsive, non-privileged documents, including any additional notebooks for the Pro V1, Pro V1 Star and/or NXT Tour golf balls. To the extent any responsive, non-privileged documents exist, we will produce them shortly.

f. Testing of Pro V1x Golf Balls

We are investigating the existence of any documents that exist at Acushnet regarding test data for changes in the levels of ZnPCTP in the Pro V1x golf balls. To the extent any such data exists that is responsive and non-privileged, we will produce it.

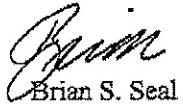
7. Documents Identified During the Deposition of David Bulpett

In its collection of documents from the competitive ball database, Acushnet collected information included under the "Additional Data" heading, where any such information appeared that was both responsive and non-privileged.

Your letter states that "[o]ther deficiencies in Acushnet's production were established during deposition," but does not identify them. To the extent you believe that any further deficiencies exist, we ask that you bring them to our attention promptly so that we may address them. Otherwise, we will understand your silence to mean that no further alleged deficiencies exist.

We look forward to discussing these matters with you on Monday, along with the deficiencies raised in Alan Grimaldi's October 27 letter to Scott Flicker, to which we have yet received no response.

Regards,



Brian S. Seal

NOV. 3. 2006 6:52PM

HOWREY SIMON ARNOLD

NO. 568 P. 1



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	COMPANY:	<u>Paul Hastings</u>	
	FAX NUMBER	<u>202.551.1705</u>	PHONE NUMBER: <u>202.551.1700</u>
	CITY:	<u>Washington, DC</u>	
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CERTIFICATE OF SERVICE

I certify that on February 21, 2007 I electronically filed the foregoing with the Clerk of the Court using CM/ECF, which will send notification of such filing(s) to the following:

Richard L. Horowitz, Esquire
POTTER ANDERSON & CORROON LLP
Hercules Plaza, 6th Floor
1313 North Market Street
Wilmington, DE 19801

I further certify that I caused copies to be served upon the following on February 21, 2007 in the manner indicated:

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